

MUSATOVA, L.P.

Reflex effects from pleural receptors on arterial and venous pressure
respiration and lymph circulation. [with summary in English].
Fiziol.shur. 44 no.12:1107-1110 D '58 (MIRA 12:1)

1. Laboratoriya limfoobrashcheniya Instituta fiziologii AN Kazakhskoy
SSR, Alma-Ata.

(PLEURA, physiol.

eff. of stimulation on blood pressure, resp. & lymph
flow (Rus))

(BLOOD PRESSURE, physiol.

eff. of pleural stimulation (Rus))

(RESPIRATION, physiol.

same (Rus))

(LYMPHATIC SYSTEM., physiol.

eff. of pleural stimulation on circ. (Rus))

MUSATOVA, L. P.

Cand Biol Sci - (diss) "Interoceptor effects with the pleura and the pericarda on blood circulation, respiration, and lymph flow under "normal conditions" and in artificial hypothermy." Alma-Ata, 1961. 11 pp; (Joint Academic Council of the Institutes of Physiology, Emergency Pathology, Clinical and Experimental Surgery of the Academy of Sciences Kazakh SSR); 200 copies; price not given; (KL, 5-61 sup, 184)

MUSATOVA, L. P.; POTAPOV, I.A.

Effect of reflexes from the receptors of the lymphatic system
on diuresis. Izv. AN Kazakh. SSR. Ser. med. nauk 11 no.2:17-21
'64 (MIRA 1964)

MUSATOVA, L.P.; DANKOVA, A.N.

Effect of hypothermia on vascular permeability and lymph circulation. Izv. AN Kazakh. SSR. Ser. med. nauk no.1311-15 '64
(MIRA 1787)

AUTHORS:

Musatova L.V.
Shostakovskiy, M.F., Savitskiy, Ye.M.,
Kochkin, D.A., Musatova, L.V.

62-12-15/20

TITLE:

On the Comparative Efficiency of Silicon Alloys With Copper and Nickel, Applicable in Direct Synthesis of Vinylchlorosilanes
(O sravnitel'noy effektivnosti splavov Kremniya s med'yu i nikelem, primenyayemykh v pryamom sinteze vinilkhlorosilanov).

PERIODICAL:

Izvestiya AN SSSR Otdeleniye Khimicheskikh Nauk, 1957, Nr 12,
pp. 1493-1495 (USSR)

ABSTRACT:

In the course of a thorough analysis of the alloy of silicon with copper (which was already previously described) the authors, among other things, found that the alloy contained 50% silicon, 49% copper, and 0.4% aluminum. Also silicon alloys were investigated which contained also other metals such as chromium, manganese, and molybdenum. In other cases (with the exception of nickel and copper) negative results were obtained. From the result of the synthesis (see table) it may be seen that the silicon-nickel alloy is more active (when vinylchlorosilanes are obtained by direct synthesis). It was further shown that the silicon-nickel alloy (nickel content 15%) must be considered to be the most suitable. There are 1 table, and

Card 1/2

On the Comparative Efficiency of Silicon Alloys With
Copper and Nickel, Applicable in Direct Synthesis of
Vinylchlorosilanes

62-12-15/20

4 references, 2 of which are Slavic.

ASSOCIATION: Institute for Organic Chemistry AN USSR imeni N.D.Zelinskiy
(Institut organicheskoy khimii im. N.D.Zelinskogo Akademii nauk
SSSR).

SUBMITTED: August 13, 1957

AVAILABLE: Library of Congress

Card 2/2 1. Silicon copper-Alloy-Analysis 2. Silicon nickel-Alloy-Analysis

MUSATOVA, M.D.
CA

Substitutes for alum in the production of cardboard used in footwear. 11. G. Merenshtein and M. D. Musatova. *Izvestiya Vsesoyuznogo Nauchno-Issledovatskogo Instituta Khimicheskogo Tekhnologii*, 1963, No. 3/4, 17-19. $Cr_2(SO_4)_3$ and $Fe_2(SO_4)_3$ were tested as substitutes for alum as a precipitant in the production of cardboard; the former is a waste product of chem. plants, the latter of galvanizing process. The 2 products usually occur in H_2SO_4 solutions, the excess of which is neutralized by scrap iron or turnings. The $Cr_2(SO_4)_3$ acid is greenish brown and can be recovered by evapn.; the brown $Fe_2(SO_4)_3$ acid can be evapn. or dried to crystals. Tests showed that $Cr_2(SO_4)_3$ or $Fe_2(SO_4)_3$ is equal or superior to alum. The color is not detrimental for the intended use. M. Houch

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ASB-31A METALLURGICAL LITERATURE CLASSIFICATION

MUSATOVA, M.D.

CR

Peculiarities of latex G54. S. S. Voyutskii, M. D. Musatova and K. I. Bernshein. *Lekhaya Prom.* 4, No. 7/8, 27-4 (1944). Latex G54 when used as adhesive causes considerable difficulties by its erratic behavior. It contains a considerable quantity of electrolytes, and the ratio of soaps to electrolytes varies widely. The higher the ash content of the dry residue, the better the latex casts and the better its adhesive properties. To explain the effect of electrolytes on the stability of latex, different proportions of noncoagulating electrolytes (NaHCO₃, Na₂CO₃ and NaCl) were added to 5% latex. NaCl had the most pronounced effect. Upon the addition of 40% (of the dry residue) of NaCl the viscosity (Ostwald) increased from 2.5 to 3.0, and the critical concn. decreased from 7.1 to 1.6 g. per l. (This latex is not resistant to diln.). The effect of these same electrolytes on the adsorption of latex by fibers was then studied. Again the univalent cations increased the stability of the latex suspension but lowered its resistance to adsorption, a condition of great interest in production. In the use of latex suspensions for, e. g., rubberizing fibrous materials, it can be assumed that there occurs at the same time homocoagulation (due to loss of stability by the latex suspension because of diln.) and the action of multivalent ions in the plant water) and heterocoagulation (induced by interaction of suspended latex particles and the fibers in contact). If homocoagulation predominates, then the latex particles ppt. on the fiber without being tightly bound to the fibers. If heterocoagulation predominates, the latex particles form an even, strongly held film on the fibers. M. Huseh

KHOROSHAYA, Ye.S., kand. khim. nauk; KOVRIGINA, G.I., mladshiy nauchnyy
sotrudnik; KOSTRIKOVA, L.I., kand. tekhn. nauk; MUSATOVA, M.D.,
starshiy nauchnyy sotrudnik; KOPYL, A.N., starshiy nauchnyy
sotrudnik

Rapid method for determining rubber content of the leather mass
prior to its feeding to the long-shot screening machine. Nauch.-
issl. trudy VNIIPK no.14:164-167 '63. (MIRA 18:12)

KHOROSHAYA, Ye.S.; KOVRIGINA, G.I.; KOSTRYUKOVA, L.I.; MUSATOVA, M.D.
KOPYL, A.N.; Prinimala uchastiye: KRASNER, Ye.Ya.

Rapid method for determining rubber content of shoe cardboard
made from leather fibers bonded with latex. Kozh.-obuv. prom. 5
no.6:31-32 Je '63. (MIRA 16:6)

(Rubber, Artificial—Analysis)

GAMOVA-KAYUKOVA, N.I., kand.biol.nauk; SAMYSHKINA, M.A., starshiy nauchnyy sotrudnik; BERNSHTEYN, M.M., kand.tekhn.nauk; MUSATOVA, M.D., mladshiy nauchnyy sotrudnik; ABOLTINA, E.M., mladshiy nauchnyy sotrudnik; CHERKESOVA, E.I., mladshiy nauchnyy sotrudnik; IVANOVA, R.A., laborant.

Resistance to moulds of artificial leather, cardboard and ent-
duck samples. Nauch.--issl. trudy VNIIPK no.13:65-83 '62.

(MIRA 18:1)

BRITIKOV, Ye.A.; VLADIMIRTSEVA, S.V.; MUSATOVA, N.A.

Transformation of proline in germinating pollen and pistil
tissues. Fiziol.rast. 12 no.6:953-967 N-D '65.

(MIRA 18:12)

1. Institut fiziologii rasteniy imeni K.A.Timiryazeva AN
SSSR, Moskva. Submitted July 7, 1964.

BRITIKOV, Ye.A.; MUSATOVA, N.A.

Accumulation of free proline in pollen. Fiziol. rast. 11
no. 3:464-472 '64. (MIRA 17:7)

1. Institut fiziologii rasteniy imeni Timiryazeva AN SSSR,
Moskva.

MUSATOVA, N.I.

KORABEL'NIK, B.K.; DARON, D.Ya.; SERDYUKOVA, O.G.; MELEROVICH, Ye.Ye.;
MUSATOVA, N.I.

Results of psycho-prophylactic method in painless labors. Akush.gin.
no.2:29-31 Mar-Apr 51. (CIAM 20:8)

1. Candidate Medical Sciences B.K. Korabel'nik; Candidate Medical
Sciences D.Ya. Daron. 2. Of the Amalgamated Maternity Home no.32
(Head Physician--B.K. Korabel'nik), Krasnopresnenskiy Rayon, Moscow.

MUSATOVA, O.A.

GABRILOVICH, M.A.; MUSATOVA, O.A.

Preventive hygienic supervision in planning of motor tractor stations
in the white Russian S.S.R. Gig. i san. no.12:19-23 D '54. (MLRA 8:2)

1. Iz gosudarstvennoy sanitarnoy inspeksii Ministerstva zdavookhra-
neniya BSSR i kafedry gigiyeny Minskogo meditsinskogo instituta.

(INDUSTRIAL HYGIENE

in Russia, supervision of motor tractor stations)

MUSATOVA, O.A.

MEDICAL PERSONNEL

"On Improving the Qualification of Sanitary Cadres," by O.A. Musatova and K.I. Perkal', Zdravookhraneniye Belorussii, No 3, March 1957, pp 58-59.

The results achieved by advanced courses for sanitary physicians, established in the Belorussian SSR in 1952 are discussed by the authors.

These annual advanced classes in preventive sanitary control had to be attended not only by district and municipal physicians but also by the physicians of sanitary-epidemiological stations of the area. The article concludes that these classes have been very valuable, because they increase the knowledge and experience of sanitary physicians. The papers they are supposed to read in such classes also stimulate their efforts to broaden their scientific activities.

Card 1/1

- 44 -

GABRILOVICH, M.A.; MUSATOVA, O.A.

Public health facilities in cities and villages of the White Russian
Soviet Socialist Republic. Zdrav. Belor. 5 no.3:21-23 Apr '59.
(WHITE RUSSIA--PUBLIC HEALTH) (MIRA 12:7)

MUSATOVA, R.N.

Using helicopters in power engineering in Canada. ~~Energokhoz.~~ za
rub no.6:45 N-D '59. (MIRA 13:3)

(Canada--Power engineering)

MUSATOVA, R.N.

Artificial rain for increasing the output of hydroelectric power stations.
Energo Khoz. za rub. no. 4:40-41 J1-Ag '60. (MIRA 13:10)
(Hydroelectric power) (Rainmaking)

MUSATOVA, R.N.

Use of helicopters in power engineering. *Energokhoz. za rub. no.6:40*
E-D '60. (MIRA 14:3)

(North America—Electric Lines—Overhead)
(Helicopters)

PUDIKOV, G.N.; MUSATOVA, T.I., red.

[New equipment and the technology of the regeneration of sulfite liquors] Novoe oborudovanie i tekhnologiya regeneratsii sul'fatnykh shchelokov. Moskva, TSentr. nauchno-issl. in-t informatsii i tekhniko-ekon. issledovaniy po lesnoi, tselliulozno-bumazhnoi, derevoobrabatyvaiushchei promyshl. i lesnomu khoz., 1964. 52 p. (MIRA 18:5)

KATS, V.I., doktor ekon. nauk; KIRICHENKO, V.N., kand. ekon. nauk;
 IVANOV, Ye.A.; SAID-GALIYEV, K.G.; LUK'YANOV, E.B.; ~~MUSATOVA,~~
~~V.A.~~; PLYSHEVSKIY, B.P., kand. ekon. nauk; STOMAKHIN, V.I.;
 KARPUKHIN, D.N., kand. ekon. nauk; KIRICHENKO, N.Ya.;
 ZHIDKOVA, M.V., kand. ekon. nauk; ANCHISHKIN, A.I.; KLINSKIY,
 A.I., kand. ekon. nauk; SOLOV'YEV, N.S.; KLOTSVOG, F.N.;
 VSYAKIKH, E.P.; LAGUTIN, N.S., kand.ekon. nauk; LEMESHEV, M.Ya.,
 kand. sel'khoz.nauk; KORMNOV, Yu.F., kand. ekon. nauk; SAVIN,
 V.A.; TEREKHOV, V.F.; K'DROV, V.M., kand. ekon. nauk; AL'TER,
 L.B., doktor ekon. nauk, red.; KRYLOV, P.N., kand. ekon. nauk;
 LEPINKOVA, Ye., red.; KOKOSHKINA, I., mladshiy red.; ULANOVA, L.,
 tekhn. red.

[Growth of the social product and the proportions of the
 national economy of the U.S.S.R.] Rost obshchestvennogo pro-
 izvodstva i proporsii narodnogo khoziaistva SSSR. Moskva,
 1962. 453 p. (MIRA 16:2)

(Russia--Economic policy)

BOCHAROV, V.N.; DUDAYEVA, L.M.; YEVTOKIMOV, V.M.; KOLOSOV, A.F.;
KRASOVSKIY, V.P.; LUK'YANOV, E.B.; MUSATOVA, V.A.; NOVIKOV,
M.S.; SUKHOVANCHENKO, G.P.; TABELEV, V.V.; TOLKACHEV, A.S.;
CHERTKO, V.F. [deceased]; SHTANSKIY, V.A.; PAK, G.V., red.;
SELESNEVA, A.D., mlad. red.

[Structure of capital investments in the U.S.S.R. and the
U.S.A.; analysis and methods of comparison] Struktura kapi-
tal'nykh vlozhenii SSSR i SShA: analiz i metody sopostav-
leniya. Moskva, Ekonomika, 1965. 250 p. (MIRA 18:5)

1. Moscow. Nauchno-issledovatel'skiy ekonomicheskii insti-
tut.

MUSATOVA, V.I.

USSR/Cultivated Plants. - Fodder

M-6

Abs Jour : Ref Zhur - Biol., No 1, 1958, No 1624

Author : V.I. Musatova, ~~D.M. Ponomarchuk~~

Inst : Not Given

Title : Hybrid Variety of Clover "Severyanin".

Orig Pub : Seleksiya i semenovodstvo, 1957, No 2, 47-48

Abstract : The Severyanin variety (an improved Pechorskiy) was obtained by the Syslo'skiy Variety Division (Komi ASSR) through crossing the Pechorskiy wild clover with Permskiy and Yaroslavskiy clover and subsequent mass selection in combination with directional raising. The Severyanin is characterized by tall plants (70-95 cm), pronounced bushiness and uniform foliage. The yield of hay under the conditions of Komi ASSR on a 10 year average was 5-7 centners per hectare greater than that of the other varieties of the clovers, assigned to specific rayons.

Card : 1/1

SARANCHA, Ye.T.; MUSATOVA, Yu.G.

Analytical control at the Lisichansk Chemical Combine. Rev. 100.
30 no.1:114-115 '64.

1. Zamestitel' nachal'nika tsentral'noy zavodskoy laboratorii Lisichanskogo khimicheskogo kombinata (for Sarancha). 4. Zamestitel' kontrol'noy gruppy tsentral'noy zavodskoy laboratorii Lisichanskogo khimicheskogo kombinata (for Musatova).

ALEKSANDROV, I.A.; SHEYNMAN, V.I.; KOGAN, Yu.S.; SHVETS, Ye.M.;
Prinimali uchastiye: VCI'SHANCK, Yu.Z.; LIZUNKOV, V.P.;
SEREGINA, A.P.; KAZAKOVA, L.I.; MUSATOVA, Z.D.

Hydrodynamics of plates made of S-shaped elements. Khim.
i tekhn. topl. i masel 6 no. 7: 38-44 J1 '61. (MIRA 14:6)

1. Giproneftemash.
(Plate towers)

KHIGEROVICH, M.I.; MERKIN, A.P.; ZUYKOV, G.G.; KORSHUNOVA, A.P.;
OSMANOV, N.N.; DUDAK, N.Ya.; MUSATOVA, Z.I., red.

[Improving the properties of cements and concretes by the
addition of synthetic products from petroleum chemistry;
a contribution to the problems of using chemical resources
in construction] Uluchshenie svoistv tsementov i betonov
dobavkami sinteticheskikh produktov neftekhimii; k vopro-
sam khimizatsii stroitel'stva. [By] M.I.Khigerovich i dr.
Moskva, 1964. 38 p. (MIRA 18:6)

1. Moscow. Inzhenerno-stroitel'nyy institut.

CHERNOMORCHENKO, S.G., HARODITSKIY, A.D., MUSATSKOV, N.V.

Diffusion of barium in the coating of an oxide cathode.

Trudy SAGU no.148:81-84 '59.

(MIRA 13:7)

(Cathodes) (Barium) (Diffusion)

MUSAYEV, Agasaf

Driver of heavy trains. Sov.profsoluzy 6 no.13:66 0 '58.
(MIRA 11:11)

1. Predsedatel' mestnogo komiteta vagonnogo uchastka stantsii
vagonnogo depo Kirovabad, Azerbaydzhanskaya SSR.
(Locomotive engineers)

L 43009-65

ACCESSION NR: AP5008654

S/0084/65/000/002/0026/0027

AUTHORS: Musayalyan, A. (Candidate of economics sciences); Miroshnikov, A. (Candidate of economics sciences) 4
B

TITLE: Annular airways

SOURCE: Grazhdanskaya aviatsiya, no. 2, 1965, 26-27

TOPIC TAGS: civil aviation, commerce, cost, economic planning, transportation

ABSTRACT: A method of determining the economic feasibility of using annular airways for commercial aviation was studied. The method is based on a mathematical model of economic conditions to measure the expediency of adapting annular lines. The method includes a means of establishing available aircraft reserves for operation in the balance system, evaluating their numerical quantities, and determining the possibility of using the given reserves in an annular airway system with corresponding computations of the economic effect of the plan. Three measures of economic benefit are used: 1) the decrease in the required number of aircraft, 2) the decrease in operating expenses, and 3) the decrease in required capital outlay. Emphasis is placed on evaluating the first of the three criteria. Formulae are given for the two cases of installing the annular system on new air routes and on existing routes. The formulae take into account the number of daily flights per aircraft, passenger
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L 43009-65

ACCESSION NR: AP5008654

capacities, airport facilities, population center data, and other variables. An example of using the economic formulae is worked out for the case of three hypothetical cities served by three airlines. A discussion is also given for the case of serving Moscow, Riga, and Leningrad with annular routes. The annular airway scheme is shown to be economically justifiable by the model presented. Orig. art. has: 1 figure and 3 equations.

ASSOCIATION: none

SUBMITTED: 00

ENCL: 00

SUB CODE: 00

NO REF SOV: 000

OTHER: 000

Card 2/2

NAZAROV, A.G.; KARAPETYAN, B.K.; MUSAYELYAN, A.A.; PIRUZYAN, S.A.;
SAFARYAN, A.N. [deceased]; SHAGINYAN, S.A.

Preliminary work results of the engineering seismological
detachment of the Joint Tajik Seismological Expedition in
the Stalinabad region. Izv. Otd. est. nauk AN Tadzh. SSR
no.3:11-26 '99.
(MIRA 15:5)

1. Institut seysmostoykogo stroitel'stva i seysmologii
AN Tadzhikskoy SSR, Institut stroymaterialov i sooruzheniy
AN Armyanskoy SSR i Institut stoitel'nogo dela AN Gruzinskoy
SSR.

(Stalinabad region—Seismological research)

MUSAYELIAN, A.A.

Subsidence properties of subsurface loess soils. Trudy
Inst. seism. stroi. i seism. 9r153-161 '61. (MIRA 15:11)
(Loess)
(Substances (Earth movements))

MUSAYELIAN, A.A.

Effect of rain and irrigation waters on the subsidence deformations
of soils in Dushanbe. Trudy Inst. seism. stroi. i seism. 11:138-146
'62. (MIRA 16:5)
(Dushanbe--Subsidence (Earth movements)) (Soil moisture)

MUSAYELIAN, A.A.

Effect of moisture on the subsidence deformations of soils in
Dushanbe. Trudy Inst. seism. stroi. i seism. 11:147-158 '62.

(MIRA 16:5)

(Dushanbe--Subsidence (Earth movements)) (Soil moisture)

MUSAYELYAN, A.D.

Method of vertical shaft sinking in water-bearing ground with
use of airlift water pumping. Gor. zhur. no.6:40 Je '58.
(Mine pumps—Patents) (MIRA 11:6)

NR: AT6028971

SOURCE CODE: UR/0000/65/000/000/0101/0107

AUTHOR: Levi, V. A.; Musayelyan, A. S.; Polonskiy, E. M.; Khachatryan, S. S.

ORG: Bureau of Marine Geophysical Prospecting. Azerbaydzhan Scientific-Research Institute of Petroleum Production (Kontora morskoy geofizicheskoy razvedki. Azerbaydzhanskiy nauchno-issledovatel'skiy institut po dobyche nefi)

TITLE: Results of the application of the central-ray method in the southeastern part of the Kur depression

SOURCE: Vsesoyuznyy seminar po novoy metodike seysmorazvedki. Seysmorazvedka s primeneniym gruppirovaniya vzryvov na dlinnykh bazakh i sposoba tsentral'nykh luchey (Seismic prospecting using the grouping of shots on long bases and the method of central rays); trudy seminar. Moscow, Izd-vo Nedra, 1965, 101-107

TOPIC TAGS: seismic prospecting, underground explosion, seismic wave, seismology, marine seismic prospecting

ABSTRACT: The article presents an analysis of data obtained by the central-ray method (STsL) in the Mugansk steppe. It is shown that under favorable surface and subsurface seismogeological conditions,

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ACC NR: AT6028971

STsL provides more detailed and complete cross sections than continuous profiling by the method of reflected waves. Recording time increases to 7—8 sec with up to 16 instruments in the receiving group and explosive weights of 30—35 kg. Quality of data is found to decrease closer to the piedmont regions. STsL is recommended for marine seismic prospecting. Orig. art. has: 4 figures and 1 formula.

SUB CODE: 08/ SUBM DATE: 30Apr65/

MUSAYELYAN, E. S.

DANILOV, V.I., inzhener; MUSAYELYAN, E.S., inzhener.

Reactorless start of a synchronous generator for compensating operation.
Elek.sta. 24 no.9:55 S '53.

(MLRA 6:8)

(Dynamoa)

L'27270-55 EWT(m)/EMP(j) Pc-4 RM

ACCESSION NR: AP4010046

S/0062/64/000/001/0155/0157

AUTHORS: Musayelyan, I. N.; Berestneva, G. L.

TITLE: Film structure produced on composite mixture base

SOURCE: AN SSSR. Izvestiya, Ser. khim. no. 1, 1964, 155-157

TOPIC TAGS: polymer, plasticizer, composite polymer, polymer film, polymer film structure, spheriolite film structure, high molecular plasticizer, low molecular plasticizer¹⁵

ABSTRACT: An effort was made to obtain a distinct spheriolite film¹⁵ structure on a base of a polymer mixture of various compositions which would be similar to that obtained by G. A. Andrianova (Dissertation, Moscow, 1963). The amorphous portion was separated from the obtained mixtures by means of differential solution. Film samples were suspended in a tetralin-containing test tube which was then placed in a thermostat at 700 for 10 to 15 days, until complete removal of amorphous phase. The samples were then thoroughly rinsed with a stream of tetralin, preheated to 700, and examined under a MIN-8 polarization microscope. It was found that sample retains its

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L 27270-85

ACCESSION NR: AP4010046

spheriolite structure, but the spheriolites themselves become less compact and are superficially washed out. The amorphous phase was found to occupy the space between separate crystalline fibrils, which are of a complex nature being branched to a marked degree and slightly spiralled. Orig. art. has: 4 figures.

ASSOCIATION: Institut elementoorganicheskikh soedineniy Akademii nauk SSSR (Institute of Organometallic compounds, Academy of Sciences, SSSR)

SUBMITTED: 12Aug63

ENCL: 00

SUB CODE: SS, *α*

NR REF SOV: 004

OTHER: 000

Card

2/2

ACCESSION NO: AP4017631

S/0190/64/006/002/0219/0223

AUTHORS: Slonimskiy, G. L.; Musayelyan, I. N.; Kazantseva, V. V.

TITLE: The mechanical properties of polymer mixtures

SOURCE: Vyssokomolekulyarnyye soyedineniya, v. 6, no. 2, 1964, 219-223

TOPIC TAGS: polymer, polymer mixture, polypropylene, polyisobutylene, crystalline polypropylene, amorphous polypropylene, stretch, deformation, two phase system, two phase colloidal system, mechanical property, isotactic polypropylene

ABSTRACT: The present study was conducted on mixtures of polypropylenes as such and with polyisobutylene. By consecutive fractionation of technical grade polypropylene an atactic amorphous polypropylene was obtained having a molecular weight of 25 700. This was mixed with isotactic crystalline polypropylene of a molecular weight of 347 000 in 1:3, 1:1, and 3:1 ratios. Mixtures of isotactic crystalline polypropylene with polyisobutylene of 96 500 molecular weight were also prepared in the same ratios. These mixtures were dissolved in decalin at 170-180C, followed by precipitation with acetone and drying in vacuum at 100C. From these samples films were prepared by pressing at 100 kg/cm² and at 200C. X-ray study and thermomechanical stretch deformation tests at various temperatures were performed. It was found

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ACCESSION NO: AP4017631

that with a shift in the ratios of the components from 1:3 to 3:1, one could observe a transition from an amorphous system filled with a crystalline component to a crystalline system containing an amorphous filler, representing a two-phase colloidal system. A superposition of three types of deformation which develop to various degrees, depending upon the composition as well as on the temperature, is suggested as an explanation for the observed relationship between ultimate stretch and temperature. Orig. art. has: 3 charts.

ASSOCIATION: Institut elementoorganicheskikh soedineniy AN SSSR (Institute of Elementoorganic Compounds AN SSSR)

SUBMITTED: 02Oct62

DATE ACQ: 23Mar64

ENCL: 00

SUB CODE: CH

NO REF SOV: 004

OTHER: 000

Card 2/2

ACCESSION NR: AP4037277

S/0190/64/006/005/0818/0822

AUTHORS: Slonimskiy, G. L.; Musayelyan, I. N.; Kazantseva, V. V.; Ozerov, G. M.

TITLE: Mechanical properties of polymer mixtures. 2. Mixing an amorphous polymer with an amorphous one, and a crystalline polymer with a crystalline one

SOURCE: Vy*sokomolekulyarny*ye soyedineniya, v. 6, no. 5, 1964, 818-822

TOPIC TAGS: crystalline polymer mixture, polypropylene polyethylene mixture, amorphous polymer, polypropylene polyisobutylene mixture, thermomechanical curve, relative stress, elongation

ABSTRACT: These investigations involved mixtures of amorphous polypropylene (APP) (mol. wt. 25 700) with amorphous polyisobutylene (APIB) (mol. wt. 100 000), and of crystalline isotactic polypropylene (CPP) (mol. wt. 347 000) with polyethylene (CPE) (mol. wt. 20 000). Mixtures in ratios 1:0, 3:1, 1:1, 1:3, and 0:1 were prepared from solutions of the polymers in decaline at 130-140C by precipitation with acetone. They were dried in vacuum at 100C. Films of the amorphous components were pressed at 150C under 100 kg/cm², and films of the crystalline components were pressed at 240C under 100 kg/cm². A study of CPP-CPE mixtures, conducted with a

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ACCESSION NR: AP4037277

polarizing microscope MIN-8, revealed their heterogeneous structure. The thermo-mechanical curves within a 0-175C range showed that the temperature of flow rose with the increase of CPP content. The same was true for the strength of the crystalline polymer mixture. It was also found that a noticeable deformation trend set in following the melting of a large part of CPP. Studies of the relation between the relative stress and the elongation of the amorphous APP-APIB mixtures (at 20, 40, and 60C) revealed a more rapid decrease of deformation in mixtures with a predominance of APP. Orig. art. has: 4 charts and 1 picture.

ASSOCIATION: Institut elementoorganicheskikh soyedineniy AN SSSR (Institute of Elementoorganic Compounds, AN SSSR)

SUBMITTED: 01Jun63

DATE ACQ: 09Jun63

ENCL: 00

SUB CODE: MT , OC

NO REF SOV: 002

OTHER: 000

Card 2/2

ACCESSION NR: AP4037278

S/0190/64/006/005/0823/0826

AUTHORS: Slonimskiy, G. L.; Musayelyan, I. N.; Kazantseva, V. V.

TITLE: Mechanical properties of polymer mixtures. 3. Mixing polyisobutylene with polyethylene. Densities of the polymeric mixtures

SOURCE: Vyssokomolekulyarnyye soyedineniya, v. 6, no. 5, 1964, 823-826

TOPIC TAGS: polymer mixture, polyisobutylene polyethylene mixture, thermomechanical property, polymer mixture density

ABSTRACT: The present investigation involved polyisobutylene (mol. wt. 100 000) and high pressure polyethylene (mol. wt. 20 000), compounded in ratios of 1:3, 1:1, and 3:1. Aliquots of the crystalline and amorphous polymers were dissolved in decaline at 130-140°C in an atmosphere of nitrogen. They were then precipitated with acetone and dried in vacuum at 100°C. Films made from these samples were pressed at 200°C and 100 kg/cm², and subjected to x-ray analysis and thermomechanical tests. The relation between the density of mixtures and their composition was determined. The x-rays and thermomechanical curves showed the incompatibility of crystalline and amorphous polymers. It was found that the densities of the mixes bear a direct

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ACCESSION NR: AP4037278

(almost linear) relationship to composition. Tests performed within the 20-60C range revealed that the strength of polyisobutylene was substantially below that of polyethylene. A continuous increase of strength was observed in the mixtures as their crystalline polyethylene content was raised. Mixing of the ingredients by mechanical means had a leveling effect on the maxima and minima of strengths. Orig. art. has: 4 charts.

ASSOCIATION: Institut elementoorganicheskikh soedineniy AN SSSR (Institute of Elementoorganic Compounds, AN SSSR)

SUBMITTED: 01Jun63

DATE ACQ: 09Jun64

ENCL: 00

SUB CODE: 00

NO REF SOV: 006

OTHER: 002

Card 2/2

ACCESSION NR: AP4040480

S/0190/64/006/006/1001/1005

AUTHORS: Shonimskiy, G. L.; Musayalyan, I. N.

TITLE: Study of the fluidity of polyisobutylene

SOURCE: Vyssokomolekulyarnyye soyedineniya, v. 6, no. 6, 1964, 1001-1005

TOPIC TAGS: polymer deformation, residual deformation, elastic deformation, thermochemistry, molecular weight, polymerization coefficient, viscosity coefficient, viscous flow activation

ABSTRACT: Fluidity of polyisobutylene as a function of molecular weight was determined viscosimetrically and thermomechanically at various temperatures, stresses, and durations of flow. Molecular weights were calculated from the formula derived by V. A. Kargin and T. I. Sogolova (Zh. fiz. khimii, 23, 551, 1949),

$$\lg N = 1.35 + \frac{0.7 (T_r - T_c)}{263 + (T_r - T_c)}$$

where T_r is the temperature of transformation from the highly elastic into the plastic viscous state, T_c is the temperature of transformation from the vitreous into the highly elastic state, and N is the coefficient of polymerization. They

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were found to be $\sim 100\ 000$. Samples cut from the films 1.5 - 2.0 mm thick were studied for elongation and for the residual length. Experimental results were obtained for: 1) total deformation at increasing stress and time of stress application; 2) highly elastic deformation under stress up to 4 kg/cm^2 ; 3) residual deformation under stress and time of stress application; 4) the relation of the initial viscosity coefficient and its logarithm to the reciprocal absolute temperature $1/T$; 5) the dependence of the ratio of highly elastic elongation and sample length on the temperature and stress; 6) the activation energy of viscous flow and the high elasticity modulus. Calculations of highly elastic and residual deformations and of initial viscosity coefficients were made. These results are presented graphically as shown by Fig. 1 on the Enclosure, where the relation between logarithm of viscosity η_H and $1/T$ is seen to be linear (contrary to the previous information). Orig. art. has: 6 graphs and 3 formulas.

ASSOCIATION: Institut elementoorganicheskikh soyedineniy AN SSSR (Institute of Elementoorganic Compounds, AN SSSR)

SUBMITTED: 01Jun63

DATE ACQ: 06Jul64

ENCL: 01

SUB CODE: MT

NO REF SOV: 009

OTHER: 001

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ACCESSION NR: AP4040480

ENCLOSURE: 01

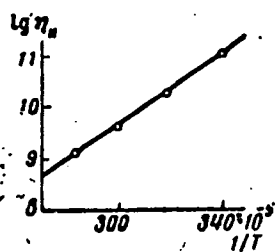


Fig. 1. Relation of $\log \eta_H$ to $1/T$

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L 00745-66 EWT(m)/EWP(j)/T RM

ACCESSION NR: AP5020961

UR/0190/65/007/008/1301/1305

AUTHOR: Raspopov, L. N.; Musayelyan, I. N.; Chirkov, N. M.; Yeremina, I. V.

TITLE: Mechanical properties of polyethylene produced in the presence of soluble catalytic systems

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 7, no. 8, 1965, 1301-1305

TOPIC TAGS: solid mechanical property, polyethylene plastic, synthetic fiber, polymerization catalyst

ABSTRACT: Physico mechanical properties of polyethylene (I) obtained in the presence of soluble catalyst systems in chlorine-containing solvents, and of low pressure polyethylene (II) were compared over a wide range of molecular weights (I, $[\eta] = 0.7-12$; M. W. 21,400-170,000; II, $[\eta] = 0.9-5.5$). The strength of I exceeded that of II having the same $[\eta]$ value by 100-150 kgs/cm², indicating less branching and narrower molecular weight distribution in I. The crystallinity of different molecular weight samples of I decreased as cooling rate increased, and

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decreased somewhat with increase in molecular weight. At room temperature I was readily deformable in the $[\eta] = 1.25-1.40$ range. Elongation at break decreased and polymer strength increased as molecular weight of I increased ($[\eta] > 1.40$). The polymer strength of I ($[\eta] = 2.5-4.6$) decreased with increasing temperature, and elongation at break went through a maximum, indicating partial amorphization. The polymer strength of anisotropic samples of I increased and the elongation at break decreased as orientation temperature increased. Strengths of 90-100 kgs/mm² were attained at 80-90C compared to 50-60 kgs/mm² for II. Thus the polyethylene obtained by solution polymerization fulfills the strength and high orientation prerequisites for the manufacture of high strength fiber. Orig. art. has: 5 figures and 1 table

ASSOCIATION: Institut khimicheskoy fiziki AN SSSR (Institute of Chemical Physics AN SSSR)

SUBMITTED: 17Jul64

ENCL: 00

SUB CODE: MT, GC

NR REF SOV: 003

OTHER: 004

Card

2/2

MUSAYELYAN, L.S.

Treatment of obliterating endarteritis and tropic ulcers of the leg by subcutaneous administration of oxygen under polyclinical conditions. Sov. med. 24 no.6:90-97 Je '60. (MIRA 13:9)

1. Iz polikliniki imeni F.E. Dzerzhinskogo, Moskva.
(ARTERIES—DISEASES) (OXYGEN—THERAPEUTIC USE)
(LEG—ULCERS)

MUSAYELYAN R.M.

KATSAUROV, L.N.; MUSAYELYAN, R.M.; POPOV, V.I.

Total effective cross section of tritium for 2,5 and 14 Mev neutrons.

Atom. energ. suppl. no.5:71-74 '57. (MIRA 11:2)

(Tritium) (Nuclear reactions) (Neutrons)

MUSAYELYAN A
KATSAUROV, L.N.; MUSAYELYAN, R.M.; POPOV, V.I.

Total effective cross section of Li^6 and Li^7 for 2.5 and 14 Mev
neutrons. Atom. energ. suppl. no.5:90-91 '57. (MIRA 11:2)
(Nuclear reactions) (Lithium--Isotopes)

MUSAYELIAN, R.N., mladshiy nauchnyy sotrudnik

Pay greater attention to safety engineering. Neftianik 7
no.6:27 Je '62. (MIRA 15:8)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut po tekhnike
bezopasnosti v neftyanoy promyshlennosti.
(Oil wells--Equipment and supplies)

MUSAYELYANTS, R.N.

Study of loads arising during the freeing of frozen pipes. *Trudy*
VNIITB no.10:40-54 '58. (MIRA 15:5)
(Oil well drilling--Equipment and supplies)

MUSAYELYAN, Sh.A.

A three dimensional problem of flow past uneven terrestrial surfaces considering the sphericity of the earth. Dokl.AN SSSR 103 no.5:815-818 Ag '55. (MLRA 9:1)

**1.TSentral'nyy institut prognozov.Predstavlene akademikem A.A.Derednitsynym.
(Atmosphere)**

SOV/124-57-7 8034

Translation from: Referativnyy zhurnal. Mekhanika, 1957, Nr 7, p 85 (USSR)

AUTHOR: Musayelyan, Sh. A.

TITLE: Concerning the Waves Generated in Air Currents Flowing Over Mountain Obstacles (Three-dimensional Problem on a Spherical Surface)
[O volnakh, porozhdayemykh gornym prepyatstviyem v vozdushnom potoke (prostranstvennaya zadacha na sfere)]

PERIODICAL: Tr. Tsentr. in-ta prognozov, 1956, Nr 43 (70), pp 19-28

ABSTRACT: The author examines an adiabatic atmosphere flow moving over a spherical earth. The perturbations caused by ground-surface relief in a purely zonal circulation are investigated. Adopted as the boundary conditions are the assumptions that: 1) the pressure perturbations will drop to zero at a certain altitude, and 2) the air slides over the surface of the ground. The long-wave method is used. The system of equations employed and the second of the stated boundary conditions are linearized by the method of small perturbations; the linearization is effected with respect to a purely zonal circulation. The author reduces the problem to the finding of a solution for a single pressure equation. This equation contains a parameter that is essentially a function

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SOV/124-57-7-8034

Concerning the Waves Generated in Air Currents Flowing Over Mountain (cont.)

of the dimensions of the unevennesses of the ground surface. It proves possible to examine separately the two extreme cases of high mountains and low mountains. The analysis made enables the author to establish that the presence of a high mountain range (of the Rocky-Mountains type) results in pressure perturbations which take the form of waves superimposed on the Westerlies. The amplitude of such a wave decreases exponentially with increasing altitude. In the case of mountains that are of small elevation the perturbation waves generated tend to be three-dimensional and their amplitudes vary with altitude not exponentially but sinusoidally.

S. A. Mashko-ich

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MUSAYELYAN, SH.H

AUTHOR: Musayelyan, Sh.A.

49-12-12/16

TITLE: Centres of Activity of the Atmosphere (O tsentrakh deystviya atmosfery)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya Geofizicheskaya, 1957, No.12, pp. 1520 - 1523 (USSR)

ABSTRACT: It is assumed that the Earth is a sphere of the radius $a = 6.37 \cdot 10^6$ m, rotating about its axis with a constant angular speed of $\omega = 7.29 \cdot 10^{-5}$ sec⁻¹. The movements inside the rotating atmosphere shell, which are affected by gravity forces and by the deflecting force caused by the rotation of the Earth, are represented as superimposed small disturbances on the "purely zonal circulation". For assumptions as described in the paper, E.N. Blinkova [Ref.1] presented a method of determining the climatic field of the pressure on the Earth ("centres of activity" of the atmosphere). By means of the equations derived in this paper, the author established the relation between the functions of the current and the pressure which was assumed by E.N. Blinkova in her work. There is 1 Slavic reference.

ASSOCIATION: Central Forecasting Institute (Tsentral'nyy Institut Prognozov)

SUBMITTED: April 24, 1957

Card/1 AVAILABLE: Library of Congress.

MUSAYELYAN, SH. A.

AUTHORS: Musayelyan, Sh. A. Kheyfets, Ya. M.

50-2-1/22

TITLE: Experimental Application of the "Pogoda" Electronic Computer in
Forecasting Mean Monthly Air Temperature Anomaly

(Opyt primeneniya elektronnoy vychislitel'noy mashiny
"Pogoda" dlya prognoza srednemesyachnoy anomalii temperatury
vozdukha).

PERIODICAL: Meteorologiya i Gidrologiya. 1958. Nr 2, pp. 3-9 (USSR)

ABSTRACT: The weather forecast by means of methods of hydrodynamics
necessitates extensive computations within limited time.
Therefore, computers are used for this purpose.
Besides electronic universal computers there exist special
machines for the solution of a certain range of problems.
Such machines are less complicated and can be more easily
operated. As to their performance they are equal to the
electronic universal computers at the solution of problems
of the above kind.
Here the methods of the computations of the average monthly
temperature deviations by means of the electronic computer
"Pogoda" is given.

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The theoretical foundations of this methods are works

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by Mrs. Ye. N. Blinova. She assumes that the atmospheric motions are an excitation acting on the local (zonal) current, which adjusts itself to the thermal influx and thus, a new equation for the nonzonal and non-steady temperature deviations is obtained. This equation establishes the relations between the local changes of temperature deviations and the important factors of atmospheric circulation.

To these factors belong zonal shiftings of temperature, meridional shifting of temperature, horizontal mixture of greater extent and vertical heat conductivity.

The whole process of computation according to this scheme consists of the following stages:

- 1) Preparation of data
- 2) Computation of the Fourier coefficient for each width of the initial field
- 3) Computation of the expansion coefficient of the initial field in an algebraic or geometric progression according to the functions H_n^m .

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- 4) Computation of the Fourier-coefficient of the field of forecasting
- 5) Computation of the field of forecasting of the average monthly temperature deviations.

Each state makes necessary a multiple computation of the sums of the pair products. This a typical computation suited for the "Pogoda" machine. If electric calculating machines had been used for this forecasting this computation would have taken approximately 56 working hours (8 computations with 7 hours each) however, this computation with the "Pogoda" machine does not take more than 30 minutes operational time. This is the first computation carried out by means of this machine. At present also computations according to other schemes are carried out. There are 3 figures, and 4 references, all of which are Slavic.

AVAILABLE: Library of Congress

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49-58-5-6/15

AUTHOR: Musayelyan, Sh. A.

TITLE: The Effect of Irregularities of the Earth's Surface on Determining the Pressure at Sea Level (Ob uchete vliyaniya nerovnostey rel'yefa poverkhnosti zemli pri opredelenii davleniya na urovne morya)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya Geofizicheskaya, 1958, Nr 5, pp 625-635 (USSR)

ABSTRACT: Ye. N. Blinova (Ref.1) considered the problem of determining the mean planetary pressure field over a large time interval ('the atmospheric centre of gravity') on the assumption that there is a known temperature distribution in the atmosphere. The present article tries to make these results more accurate by taking into account the surface relief of the Earth. Consider the Earth as a sphere, radius $a = 3.7 \times 10^6$ m and use a spherical co-ordinate system: θ is the angle complementary to the latitude; λ is the longitude; r is the distance from the Earth's centre (the θ axis is directed southwards, the λ axis eastwards). Let v_θ , v_λ and v_r be the component velocity vectors; P the pressure; T the temperature; ρ the density; $z (= r - a)$ the height

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The Effect of Irregularities of the Earth's Surface on Determining the Pressure at Sea Level.

above sea level. To linearize the problem, it is assumed that the atmosphere moves basically with a zonal circulation upon which small oscillations are superimposed. Thus if the zonal circulation is given by:

$$\bar{v}_\lambda = \alpha \alpha(z) \sin \theta \quad (1.1)$$

(α is the circulation index) then the other variables are given by Eq.(1.2), where v'_θ , v'_λ , v'_r , P' , T' are small deviations (corresponding to the meteorological characteristics of the atmospheric state) which depend on θ . At the same time Eq.(1.3) holds, where $\bar{\rho}(z)$ is standard density; $P_{00}(z)$ standard pressure at the Pole; $T_0(z)$ temperature at the Pole and $M(z)$ fall of temperature between Pole and Equator. In Ref.1 Blinova gives Eq.(1.4) for the perturbation of the stream function ϕ' . (Where $\omega = 7.29 \times 10^{-5} \text{sec}^{-1}$ is the angular velocity of rotation of the Earth and $\bar{T}(z)$ is a standard temperature). If the irregular relief of the Earth is represented by Eq.(1.6), then the result vertical component of the wind velocity satisfies the conditions(Eq.1.7).

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Integrating Eq.(1.4) from $z = \xi(\theta, \lambda)$ to ∞ gives Eq.(1.8). This, together with Eq.(1.9) and Eq.(1.10), can be written in the form Eq.(1.11). On the other hand, integrating the barometric equation from the surface of a hill (ξ) to a given height gives Eq.(1.12). If, from Eq.(1.12), the pressure P_z at a height z and the pressure P_ξ on the hill are put in the form of Eq.(1.13), Eq.(1.14) is obtained after linearizing. On making the approximation that P_ξ and P_z do not depend on θ (i.e. $\bar{P}_z(z)$ is the standard pressure and $\bar{P}_\xi(z)$ is the standard pressure at the level of the hill), Eq.(1.15) is obtained. Eq.(1.16) is taken as the relation between the stream function and the pressure. (This is obtained in Ref.1 from Euler's first equation of motion). Eqs.(1.15) and (1.16) together give Eq.(1.17), and the definitions (1.18). On inserting Eq.(1.17) into Eq.(1.11), Eq.(1.19) is obtained, which can be written in the simpler form Eq.(1.20) by means of Eq.(1.21). If $\xi = 0$ is substituted in Eq.(1.20), then the results of Ref.1 are obtained. This article is not concerned with the effects

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of thermal factors and hence only the Eq.(1.22) is considered further. The right-hand part of this equation is considered to be known. Assuming Eq.(1.23), solutions of Eq.(1.22) are looked for in the form Eq.(1.24). It can be seen that, using Eqs.(1.23) and (1.24), Eq.(1.22) can be written in the form Eq.(1.25). Equating coefficients of $\cos m\lambda$ and $\sin m\lambda$ on both sides of Eq.(1.25), Eq.(1.26) is obtained, expressing φ_n^m and $\varphi_n'^m$ in terms of ξ_n^m and $\xi_n'^m$.

Thus, knowing ξ_n^m and $\xi_n'^m$, an analysis of the right-hand side of Eq.(1.22) by the formula (1.26) enables φ_n^m and $\varphi_n'^m$ to be determined. The function $\Phi(\theta, \lambda)$ can then be found from Eq.(1.24) and finally the pressure P_ξ from Eq.(1.18).

In making calculations with these equations it is necessary first to construct the field of the function (Eq.2.1) to simplify calculations. T averaged over height is removed from under the integral sign. The heights of mountains were

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taken from the topographic charts of Berkofsky and Bertoni (Ref.3). The bases of these charts were aeronavigational charts of scale 1:1 000 000, though some were of scale 1:5 000 000, and extrapolation was required in some cases. Fig.1 gives the average relief of the Earth's surface in the Northern hemisphere. It can be immediately seen that the relief has been very considerably smoothed out. This is, of course, essential for calculations but care must be taken not to go too far. Values of α_ξ/ω (α is the circulation index at the level of the mountain) were taken from the work of Bykov and Mashkovich (Ref.4); $\bar{\rho}_\xi$ - the standard density at the level - is taken from Koshmider (Ref.5). The function $\int \bar{\rho} dz$ was calculated according to Eq.(2.2), where \bar{p}_ξ is the standard pressure at the level of the mountain. In calculating α_ξ/α , $\bar{\rho}_\xi$ and \bar{p}_ξ is often necessary to make a linear extrapolation. The factor $4a^2\omega^3/\bar{RT}$ was considered

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constant ($\approx 0.8 \times 10^{-3}$). By using the tables mentioned, a table of values of the function (2.3) was worked out. This was analysed into a series of Legendre polynomials, coefficients of which were found for the initial field ξ_n^m and η_n^m

in January. In this case m went from 1 to 12 and n from 1 to 20. For further calculations it is necessary to form new coefficients (Eq. 2.4) from the initial ξ_n^m and η_n^m .

The value $\alpha_1/\omega = 0.026$ was taken as in Ref. 6: hence

$$2\omega - n(n+1)\alpha_1 = 2\omega [1 - n(n+1) \times 0.013] \text{ where}$$

$$2\omega = 14.78 \times 10^{-5} \text{ sec}^{-1}. \text{ The coefficients } \varphi_n^m \text{ and } \varphi_n'^m$$

so calculated, are used in Eq. (2.5) to calculate the field of $\varphi(\theta, \lambda)$. Eq. (2.6) is then employed to obtain the field of $P_E'(\theta, \lambda)$, i.e. the pressure perturbation due to irregularities of the Earth's surface. A chart of such perturbations

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is given in Fig.2. The irregularities of the Earth's surface are mainly between latitudes 25-60°N, e.g. the Rockies and the Himalayas. In such a complex situation it is difficult to make a detailed analysis of waves systems formed by individual mountain chains. It is much simpler at latitudes 60-80°N, where the only major disturbing factor is Greenland. From 25-60°N, the basic perturbing factors are the Rockies and the Himalayas. Fig.2 shows, in the region of the Rockies, an area of pressure drop, stretched out meridionally along the leeward side of the range. It will be shown that this pressure drop plays a major part in forming the climatic pressure field on the North American continent. It should be noted that the calculated pressure drop (-4.2 mb) is lower than the real value. Owing to its size, air masses have to cross the mountain barrier and only a negligible part can flow laterally. Hence the linearized boundary condition (Eq.2.7) describes the situation satisfactorily. The situation in the Himalayas is more difficult - it is hard to say whether flow over, or ground, the plateau predominates. That the latter may be the case is indicated by the division of air currents by this massif (Ref.7). Thus it is unlikely that the appli-

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cation of a linearized boundary condition will be satisfactory. Considering Fig.2 again, it can be seen that there is a large negative disturbance immediately above the plateau and, to the East, a positive disturbance. Corresponding to this pressure field, there is an air flow encircling the whole plateau anti-clockwise. This effect has been observed by Chinese meteorologists (cf. Seminar on Dynamical Meteorology at the Institute of Atmospheric Physics, Ac.Sc.USSR, 3/11/1956, Prof. Tu Cheng). The presence on the leeward side of the Himalayas of positive disturbance is also natural, (Ref.7), since to the East of the plateau small zones of high pressure of orographic origin sometimes form. Greenland has by its structure a greater resemblance to the Rockies than to the Himalayas, since it is several times longer in the meridian than in latitude. Hence maps of the two systems of disturbance are analogous. Thus Fig.2 shows a negative disturbance on the leeward side, as in the Rockies, which plays an important part in forming the climatic pressure field of the region. However, this disturbance seems to be unnecessarily extended towards the East (to Scandinavia) (Ref.2). This

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no doubt, is due to the fact that in the charts of Berkofsky and Bertoni, which have been used, the mountains of Scandinavia are not marked. If they had been taken into account, there would be a slight positive disturbance rather than the negative disturbance (reaching 3.0 mb) noted. It can be seen from Fig.2 that in the 60-80°N region, two waves (two peaks and two troughs), as can be seen from Fig.3, are generated by Greenland. Fig.3 gives the disturbance along a circle of latitude $\phi = 70^\circ\text{N}$ (full line) and $\phi = 65^\circ\text{N}$ (dotted line). These curves show that the amplitude grows slowly in the vicinity of the barrier and then dies away rapidly. At 70°N the wavelength of the waves is 7000 km. From the theories of Ref.1 and Ref.6, Fig.4 is calculated, giving the climatic pressure field for January. Comparing this with experimental results (Ref.8), Fig.5, a generally satisfactory result is obtained. Details, however, are missing, e.g. two small high pressure centres over the Rockies are absent and the calculated pressure is higher than the measured, on the leeward side. Fig.6 gives the chart obtained from combining Fig.2 and 4. This is obviously an improvement, although, for the reason given above, the area to the West of Scandinavia is still

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uncertain. In the Himalaya region, taking into account the effect of mountains makes the results worse rather than better. However, meteorological observations have not yet been made in this region, so that the accuracy of work on the pressure field in Refs. 8 and 9 might be doubted. Eq.(3.1) can be taken as one of the boundary conditions on the surface of mountains. This corresponds to the fact that the component vector of the wind velocity perpendicular to the mountain must equal zero. Strictly speaking, Eq.(3.2) is the boundary condition of which Eq.(3.1) is the linearized form. (The effect of mountain barriers is really non-linear). As a first step it is possible to take linearized equations with non-linear boundary conditions. Thus from Eq.(3.2) we have Eq.(3.3)

$$\begin{aligned} \frac{v_r}{a \sin \theta} = & \frac{v_\lambda + v'_\lambda}{a \sin \theta} \frac{\partial \xi}{\partial \lambda} + \frac{v'_\theta}{a} \frac{\partial \xi}{\partial \theta} = \alpha \frac{\partial \xi}{\partial \lambda} + \frac{v'_\lambda}{a \sin \theta} \frac{\partial \xi}{\partial \lambda} + \\ & + \frac{v'_\theta}{a} \frac{\partial \xi}{\partial \theta} \end{aligned} \quad (3.3)$$

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But since:

$$v'_\lambda = \frac{1}{a} \frac{\partial \phi'}{\partial \theta}, \quad v'_\theta = - \frac{1}{a \sin \theta} \frac{\partial \phi'}{\partial \lambda}$$

in accordance with Eq.(3.3)

$$v'_r = \alpha \frac{\partial \xi}{\partial \lambda} + \frac{1}{a^2 \sin \theta} (\xi, \phi')$$

The task is then to determine ϕ' from the equation:

$$\int_{\xi}^{\infty} \left[\alpha \frac{\partial \phi'}{\partial \lambda} + 2(\alpha + \omega) \frac{\partial \phi'}{\partial \lambda} \right] \tilde{\rho} dz = -2a^2 \omega \cos \theta \alpha \tilde{\rho} \frac{\partial \xi}{\partial \lambda} -$$

$$- 2\omega \tilde{\rho} \operatorname{ctg} \theta (\xi, \phi') .$$

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However, this requires special study and is not considered. There are 6 figures and 9 references, of which 5 are Soviet and 4 English.

ASSOCIATION: Tsentral'nyy institut prognozov (Central Forecasting Institute)

SUBMITTED: March 15, 1957.

1. Atmosphere--Pressure

Card 12/12

AUTHOR: Musayelyan, Sh.A.

SOV-25-58-9-25/62

TITLE: The Origin of Winds (Rezhim vetra)

PERIODICAL: Nauka i zhizn', 1958, Nr 2, p 59 (USSR)

ABSTRACT: The author explains how winds are formed over the Earth's surface: by the sun's unequal heating of various parts of the Earth.

1. Meteorology 2. Winds--Determination

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SOV/49-59-11-28/28

AUTHOR: Musayelyan, Sh. A.

TITLE: Some Notes on Conditions of the Lenticular Cloud Formation

PERIODICAL: Izvestiya Akademii nauk, Seriya geofizicheskaya, 1959, pp 1725-1728 (USSR)

ABSTRACT: Theoretical calculations of the air flow over mountains are made on the assumptions illustrated in Figs 1 and 2. Thus the **wave** motion is defined (Eqs (1) to (6)) which can produce the lenticular type of clouds at heights up to 30 km. The observations of the actual flow showed the agreement with theoretical calculations. Figs 3 to 5 illustrate an example of how the data were collected. Fig 3 gives the number of cases when the lenticular clouds were observed in March 1955, while Figs 4 and 5 show the mean synoptic situation during that time at 700 and 500 mb respectively for 0600 GMT. There are 5 figures and 10 references, 6 of which are Soviet, 3 English and 1 German.

ASSOCIATION: Akademiya nauk SSSR, Institut prikladnoy geofiziki (Academy of Sciences USSR, Institute of Applied Geophysics)

SUBMITTED: March 10, 1959.
Card 1/1

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MUSAYELYAN, OH H

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PHASE I BOOK EXPLOITATION

SOV/5297

Akademiya nauk SSSR. Institut prikladnoy geofiziki.

Voprosy dinamicheskoy meteorologii (Problems of Dynamic Meteorology) Moscow, Izd-vo AN SSSR, 1960. 65 p. 1,500 copies printed.

Resp. Ed.: I.A. Kibel', Corresponding Member AS USSR; Eds. of Publishing House: K.P. Gurov and V.G. Bergaut; Tech. Ed.: Yu.V. Rykina.

PURPOSE: This publication is intended for meteorologists.

COVERAGE: This collection of 4 articles discusses problems in short- and long-range weather forecasting, the theory of climate, transformation of air masses, the effect of free surfaces on the periods of long waves accompanying planetary atmospheric movements, and the theory of quasi-stationary planetary disturbances. All the articles were written between 1950-1953, and each is accompanied by references. A summary of the contents, written by I.A. Kibel', follows the last paper. No personalities are mentioned.

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Problems of Dynamic Meteorology

80V/5297

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AVAILABLE: Library of Congress (QC880.A43)

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JA/dwm/gmp
7-18-61

MUSAYELYAN, Sh.A.

Disturbances caused by solitary barriers in the field of the
horizontal velocity component. Izv.AN SSSR.Ser.geofiz. no.9:
1407-1412 S '60. (MIRA 13:9)

1.Akademiya nauk SSSR, Institut prikladnoy geofiziki.
(Winds)

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B104/B209

AUTHOR: Musayelyan, Sh. A.

TITLE: Long-term forecasts of anomalies in the vertical air speed above the northern hemisphere of the Earth

PERIODICAL: Doklady Akademii nauk SSSR, v. 137, no. 1, 1961, 72-75

TEXT: The author suggests a method for hydrodynamic long-term forecasts of the mean monthly anomalies in vertical streams for the entire northern hemisphere of the Earth. This method makes use of aerological data. The author starts with an approximation formula for vertical velocities, which has been established by Ye. N. Blinova (Ref. 5: Ye. N. Blinova, DAN, 110, no. 6(1956)):

$$2\omega a_0^2 \rho v_z \cos \theta = \int_0^z \left[\frac{\partial \Delta \psi}{\partial t} + \frac{1}{a_0^2 \sin \theta} (\psi, \Delta \psi) + 2\omega \frac{\partial \psi}{\partial \lambda} \right] \rho dz; \quad (1)$$

λ denotes the longitude of the place, θ the complement of the latitude, z the altitude above sea level, t the time, ψ the flow function, a_0 the mean radius of the Earth, ω the angular velocity of the rotation of the Earth.

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Earth, and $\tilde{\rho}$ the standard density. ψ is given by

$\psi = \frac{g}{2\omega T_1} \int_{s_{cp}}^z \tau dz + \psi_{cp} \quad (2)$, where g is the gravitational acceleration,

T_1 the standard temperature, $T = \tau \cos \theta$, ψ_{cp} is the flow function on the mean level s_{cp} . Thus, one has to know two functions for the determination of v_z , namely: $\psi_{cp}(\theta, \lambda, t)$ and $\tau(z, \theta, \lambda, t)$. The equation

$$2\omega a_0^2 \cos \theta \cdot \tilde{\rho} v_z = \int_0^z \frac{g}{2\omega T_1} \left\{ \int_{s_{cp}}^z \frac{\partial \Delta \tau''}{\partial t} dz + \alpha(z) \int_{s_{cp}}^z \frac{\partial \Delta \tau''}{\partial \lambda} dz + 2[\alpha(z) + \omega] \int_{s_{cp}}^z \frac{\partial \tau''}{\partial \lambda} dz \right\} \tilde{\rho} dz + \int_0^z \left\{ \frac{\partial \Delta \psi_{cp}}{\partial t} + \alpha(z) \frac{\partial \Delta \psi_{cp}}{\partial \lambda} + 2[\alpha(z) + \omega] \frac{\partial \psi_{cp}}{\partial \lambda} \right\} \tilde{\rho} dz, \quad (3)$$

for the determination of the non-steady non-zonal part v_z'' of v_z is obtained by linearizing Eq. (1) and using Eq. (2). τ'' and ψ_{cp}'' denote the

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Long-term forecasts of...

non-steady non-zonal parts of the functions τ and ψ_{cp} . As shown by Blinova (Ref. 4: Ye. N. Blinova, DAN, 131, no. 2, (1960)), the equation

$$\frac{\partial \Delta \varphi}{\partial t} + \alpha_{cp} \frac{\partial \Delta \varphi}{\partial \lambda} + 2(\alpha_{cp} + \omega) \frac{\partial \varphi}{\partial \lambda} = 0. \quad (4)$$

holds for τ'' and ψ_{cp}'' . φ is one of the two functions τ'' or ψ_{cp}'' , and $\alpha_{cp} = \alpha(z_{cp})$. Eq. (4) allows to eliminate from Eq. (3) the derivatives with respect to time. With the substitution $\alpha(z) = \alpha_{cp} z/z_{cp}$, the author obtains the following formula:

$$v_{z_{cp}} \cos \theta = \frac{g \alpha_{cp} z_{cp}^2}{-\omega \alpha_0^2 T_1} \frac{\partial}{\partial \lambda} (\Delta + 2) \left(\tau_0 - \frac{3\omega T_1}{g z_{cp}} \psi_{cp} \right). \quad (6)$$

τ_0'' refers to sea level. Finally, the relation

$$v_{z_{cp}} \cos \theta = \quad (9)$$

$$= \frac{g \alpha_{cp} z_{cp}^2}{12 \omega \alpha_0^2 T_1} \sum_{n=1}^{\infty} \sum_{m=1}^n [W_n^m \cos(m\lambda + \sigma_n^m t) + W_n'^m \sin(m\lambda + \sigma_n^m t)] P_n^m(\cos \theta),$$

$$W_n^m = -[n(n+1) - 2] m \left(\tau_{2n}^m - \frac{3\omega T_1}{g z_{cp}} D_n'^m \right),$$

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$$W_n'^m = [n(n+1) - 2] m \left(\tau_{2n}^m - \frac{3\omega T_1}{g z_{cp}} D_n^m \right).$$

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Long-term forecasts of...

is found for practical calculation, by means of which the anomalies in the vertical velocities may be averaged. In the present investigation, the average was taken over 40 - 70 days. A number of forecasts of anomalies in vertical streams were worked out at the Laboratoriya planetarnoy dinamiki atmosfery i gidrodinamicheskogo dolgosrochnogo prognoza pogody Instituta prikladnoy geofiziki AN SSSR (Laboratory for Planetary Motion of the Atmosphere and Long-term Weather Forecasts of the Institute of Applied Geophysics AS USSR). Figs. 1a and 2a illustrate two forecasts, and the actual data are plotted in Figs. 1b and 2b. There are 2 figures and 5 Soviet-bloc references.

ASSOCIATION: Institut prikladnoy geofiziki Akademii nauk SSSR (Institute of Applied Geophysics of the Academy of Sciences USSR)

PRESENTED: October 6, 1960, by L. I. Sedov, Academician

SUBMITTED: October 4, 1960

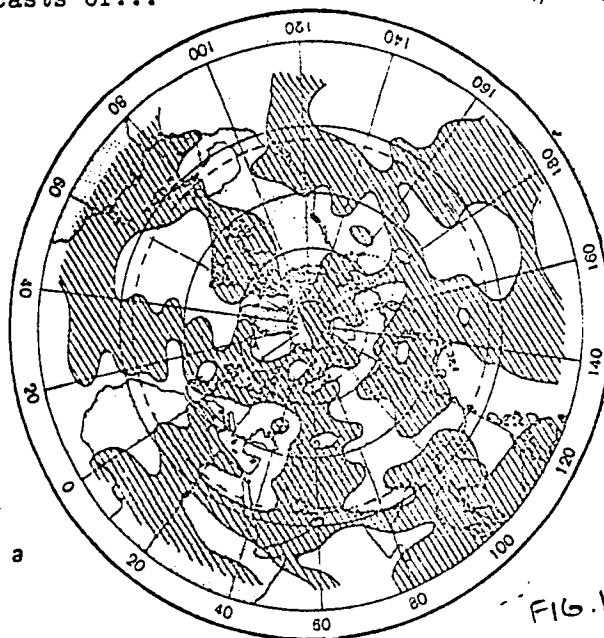
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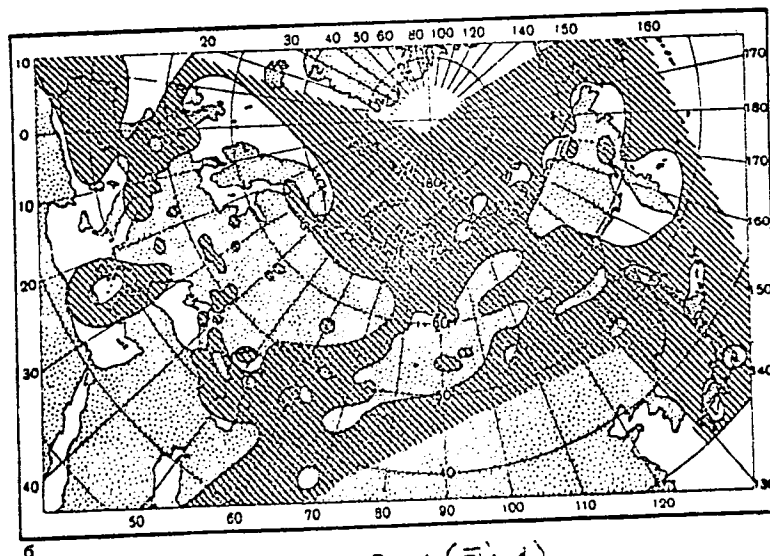
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Long-term forecasts of...

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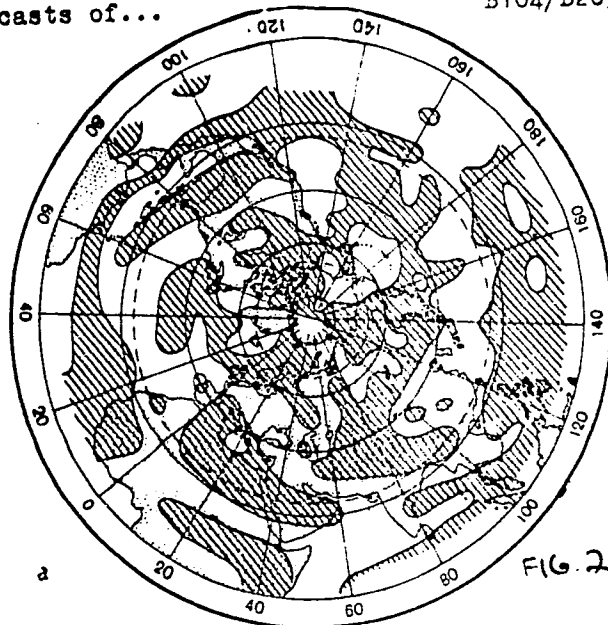


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FIG. 1 (Fig. 1)

Long-term forecasts of...

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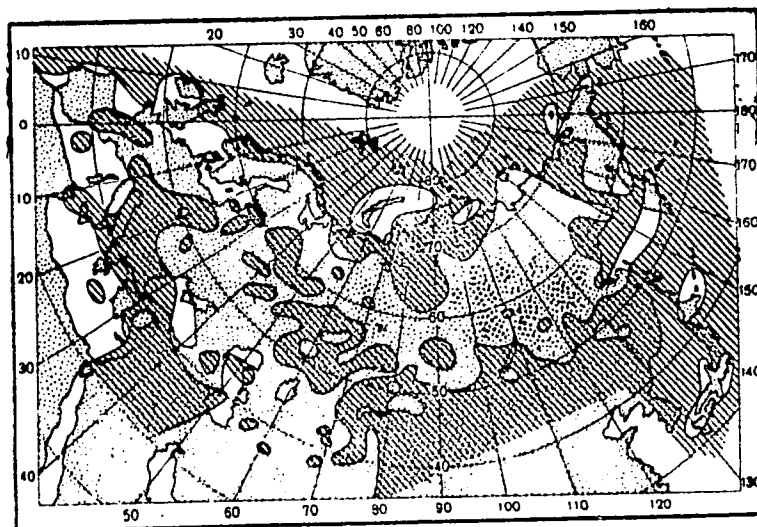
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Pac. 2 (Fig. 2)

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PHASE I BOOK EXPLOITATION SOV/6159

Musayelyan, Shabo Aslanovich

Volny prepyatstviy v atmosfere (Obstruction Waves in the Atmosphere).
Leningrad, Gidrometeoizdat, 1962. 142 p. 2,000 copies printed.

Resp. Ed.: A. P. Yurgenson; Ed.: L. P. Zhdanova; Tech. Ed.: M. I.
Braynina.

PURPOSE: The book is intended mainly for specialists directly concerned with the safety of aircraft flights. It may also be used by graduate students and scientific research workers in the fields of meteorology and aeronautics.

COVERAGE: The author deals with orographic factors causing changes of weather associated with the effect of mountains and hills upon air currents, temperature distribution, pressure, and other meteorological parameters. Discussion is limited to such orographic airflow phenomena as are of special interest in aeronautics and meteorology, e. g., obstruction waves

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Obstruction Waves in the Atmosphere

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(or mountain waves), orographic cloudiness, leeward vortices, and zones of intensive turbulence of orographic origin. Results of investigations by Soviet and non-Soviet scientists have been extensively used by the author. The author expresses thanks to the following: A. S. Monin (Institute of Physics of the Atmosphere, AS USSR), A. Kh. Khrgian (Moscow State University), K. G. Abramovich (Central Weather Institute), Ye. M. Dobryshman, V. P. Sadokov, V. V. Bykov, and G. P. Kurbatkin (Institute of Applied Geophysics, AS USSR), M. S. Shelkovnikov (Scientific Research Institute, Civil Air Fleet), and V. D. Zhirnov. There are 84 bibliographic references: 41 English, 36 Soviet, 4 German, 1 French, 1 Spanish, and 1 Czech.

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MUSAYELIAN, Sh.A.

Hydrodynamic forecasts of mean monthly values of humidity
and vertical currents for the Northern Hemisphere. Izv. AN
SSSR. Ser. geofiz. no.3:424-433 Mr '62. (MIRA 15:2)

1. AN SSSR, Glavnoye Upravleniye gidrometeorologicheskoy
sluzhby pri Sovete Ministrov SSSR i Ob'yedinenny meteorolo-
gicheskoy vychislitel'nyy tsentr.

(~~Numerical~~ weather forecasting)

MUSAYELYAN S. A.

NEMCHINOV, S.V., MUSAYEKYAN, S.A., SADOKOV, V.P.

"Some aspects on the determination of the field of stream function according to the field of vertical motion in the atmosphere."

Report submitted to the Intl. Symp. on Numerical Weather Prediction,
Oslo, Norway 11-16 March 1963

ACCESSION NR: AT4034675

S/0000/64/000/000/0062/0074

AUTHOR: Musayelyan, Sh. A.

TITLE: Forecasting humidity

SOURCE: AN SSSR. Ob'yedinenny* meteorologicheskiy vy*chislitel'ny*y tsentr. Gidrodinamicheskiy dolgosrochny* prognoz pogody* (Hydrodynamic long-range weather forecasting). Moscow, Izd-vo "Nauka", 1964, 62-74

TOPIC TAGS: meteorology, weather forecasting, long-range weather forecasting, atmospheric humidity, atmospheric vertical velocity

ABSTRACT: In an earlier paper the author investigated the linear problem of the simultaneous forecasting of the mean monthly humidity and temperature anomalies (Izv. AN SSSR, seriya geofiz., No. 3, 1961). In solution of this problem he used the method of forecasting vertical velocities developed by Ye. N. Blinova (Dokl. AN SSSR, 110, No. 6, 1956). Now the author has presented the solution, on the basis of the above studies, of the special problem of humidity transport in the atmosphere in processes of a planetary scale. This is done using a linearized equation for humidity transport and results obtained in his paper on long-range forecasting of vertical velocity anomalies in the northern hemisphere (Dokl. AN SSSR, 137, No. 1 1961). Formulation of the problem is followed by derivation of the humidity equation.

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ACCESSION NR: AT4034675

tions then are averaged in time, the field of vertical velocities also is averaged in time, the working formulas for the problem are derived and the constants B_0 and b are determined. Orig. art. has: 88 formulas and 1 table.

ASSOCIATION: Ob'yedinenny* meteorologicheskii vy*chislitel'ny*y tsentr AN SSSR
(Joint Meteorological Computation Center AN SSSR)

SUBMITTED: 22Nov63

DATE ACQ: 16Apr64

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SUB CODE: ES

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OTHER: 000

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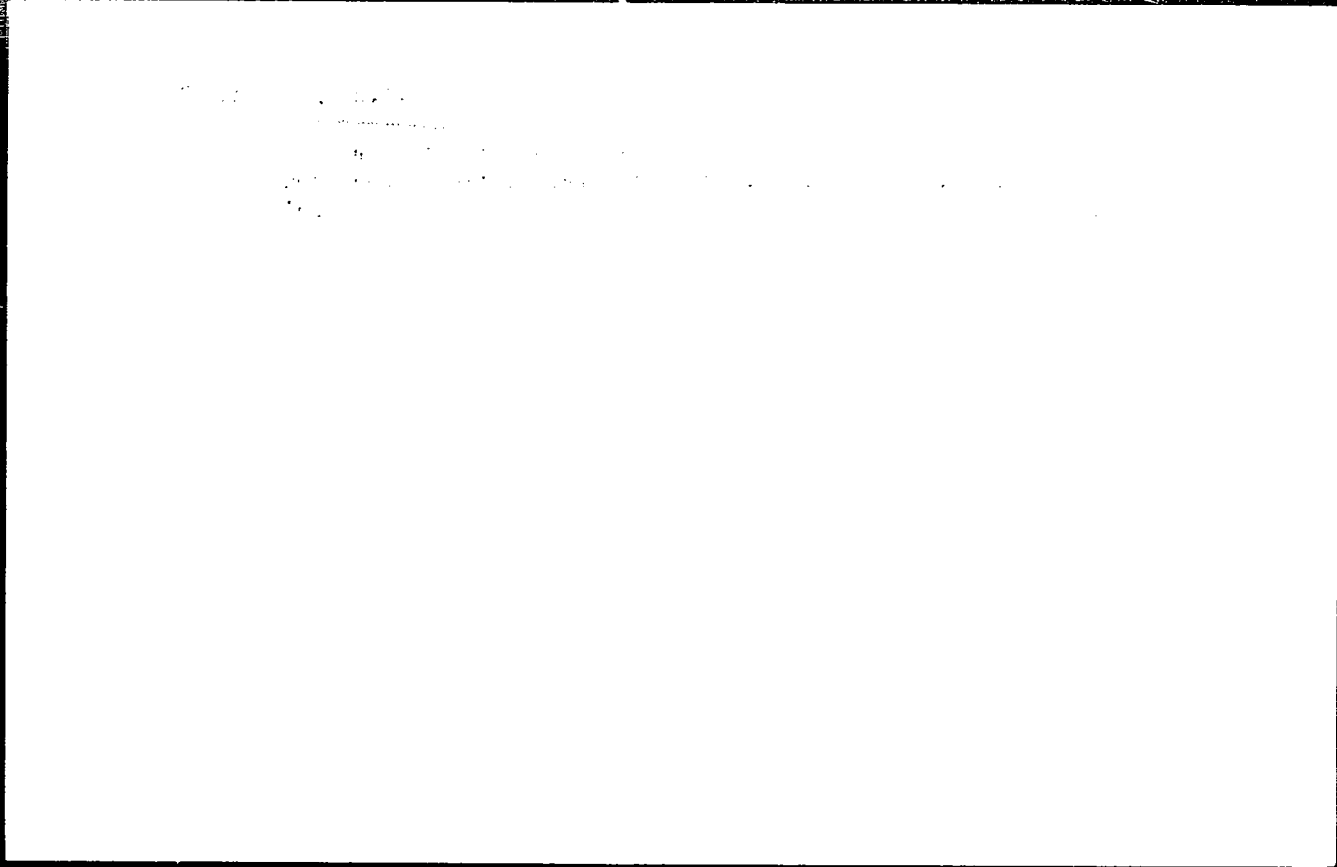
MUSAYELYAN, Sh.A.

Some exact solutions to the transfer equation and their application to problems of the physics of undulatus. Izv. AN SSSR. Ser. geofiz. no.5:765-772 My '64. (MIRA 17:6)

1. Vychislitel'nyy meteorologicheskoy tsentr Glavnogo upravleniya gidrometeorologicheskoy sluzhby pri Sovete Ministrov SSSR.

"APPROVED FOR RELEASE: 03/13/2001

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MUSAYELIAN, Sh.A.

Two-level linear scheme of humidity forecasting and a nonlinear scheme for calculating vertical motions. Izv. AN SSSR Ser. geofiz. no.10:1570-1577 0 '64.

(MIRA 17:11)

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ACCESSION NR: AP5000430

S/0050/64/000/012/0024/0030

AUTHORS: Musayelyan, Sh. A. (Candidate of physico-mathematical sciences);
Bibikova, ~~Il'ma R. Musayelyan~~

TITLE: Fluctuations in lenticular altocumulus clouds ✓

SOURCE: Meteorologiya i gidrologiya, no. 12, 1964, 24-30

TOPIC TAGS: cloud, atmosphere, humidity

ABSTRACT: The authors considered an infinite layer of atmosphere of definite thickness with a given distribution of temperature and humidity. The formation of a wave in this layer, such as one of orographic origin, and the redistributional pattern of temperature and moisture in the wave zone are studied to find how these characteristics will change with time. Simple formulas are taken from Sh. A. Musayelyan (Nekotoryye tochnyye resheniya uravneniya perenosov i ikh prilozheniya k zadacham fiziki volnovykh oblakov. Izvestiya AN SSSR, ser. geofiz., No. 5, 1964), and from these are derived the following two expressions for moisture and temperature:

$q(x, z, t) = q_0 e^{-c^2 \left(z - \frac{l}{n} e^{-bx} \sin \omega x \right)}$ and $T = T_0 - \gamma z - \frac{l}{n} (\gamma_0 - \gamma) e^{-bx} \sin \omega x$, where t is time, q_0 initial humidity, c^2 a constant depending on materials used in observation, n a constant having the dimensions of velocity, l and δ constants, $\omega = 2\pi/L$
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ACCESSION NR: AP5000430

(L = wavelength), γ the vertical temperature gradient, and γ_a the dry adiabatic temperature gradient. The authors then examine consecutive photographs of a cloud mass, noting the changes in space and time. They conclude that the clouds form in cells and that this character may be explained by considering two two-dimensional wave currents moving at some angle to each other. The vertical fields of each system may be zero, positive, or negative at any instant, and combinations of these make possible reinforced upward currents, reinforced downward currents, or somewhat cancelled zones. The distribution of these combinations in space gives rise to cells. It is therefore concluded that when such conditions obtain in nature, clouds may form in cells and these may fluctuate with time. Orig. art. has: 2 figures and 24 formulas.

ASSOCIATION: Mirovoy meteorologicheskij tsentr, Moskovskiy gosudarstvennyy universitet (World Meteorological Center, Moscow State University)

SUBMITTED: 31Mar64

ENCL: 00

SUB CODE: ES

NR REF SOV: 005

OTHER: 000

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